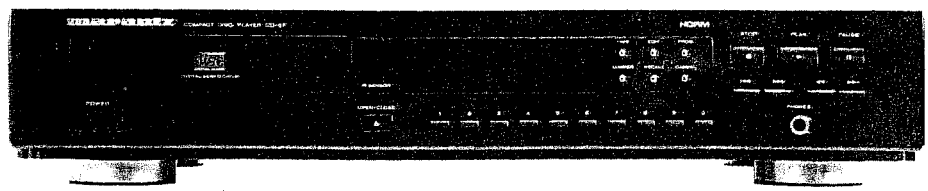
Service Manual

74 CD57/01B/02B/05B
74 CD67/01B/02B/05B/01G/02G /11B/12B/15B/12G
CD-67/67SE UBL, FB, FN
Compact disc player

COMPACT disc DIGITAL AUDIO



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Please use this service manual with referring to the guide (D.F.U.) without fall.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

model CD-57 CD-67 CD-67SE

First issue : 1996/10
4822 725 51124
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Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

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SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard N0.1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

	CD-57	CD-67	CD-67SE
Audio Characteristics			
Channels		2 channels	
Sampling frequency		44.1 kHz	
Quantization		16-bit linear/channel	
Error correction		Cross-interleave read solomon code	
D/A conversion		1-bit linear/channel	
Wow & flutter		Precision of quartz	
Optical Readout System			
Laser		GaAlAs semiconductor	
Wavelength		780 nm	
Frequency Characteristics			
Frequency range	5 Hz – 20 kHz	5 Hz – 20 kHz	5 Hz – 20 kHz
Dynamic range	> 96 dB	> 96 dB	> 96 dB
S/N ratio	> 102 dB	> 104 dB	> 104 dB
Channel separation (1 kHz)	> 100 dB	> 102 dB	> 102 dB
THD (1 kHz)	0.0025 %	0.0025 %	0.0025 %
Analog output jack			
Output level	2V RMS	2V RMS	2V RMS
Output impedance	200 ohms	200 ohms	200 ohms
Digital output			
Pin jack	0.5 Vp-p/75 ohms	0.5 Vp-p/75 ohms	0.5 Vp-p/75 ohms
Optical output	—	–19 dBm	–19 dBm
Power Supply			
/01, /11 version		115/230V AC 50/60 Hz	
/02, /05, /12, /15 version		230V AC 50 Hz	
Power consumption	11 W	12 W	12 W
Cabinet, etc.			
Dimensions			
Width	439 mm	439 mm	439 mm
Height	86 mm	86 mm	88 mm
Depth	310 mm	310 mm	310 mm
Net weight	4.3 kg	4.3 kg	5.8 kg
Operating temperatures		+5 °C ~ +35 °C	
Operating humidity		5 % ~ 90 % (without dew)	
Accessories			
Remote control unit (RC-63CD)	1	1	1
AA (R6) batteries	2	2	2
Stereo audio cable with RCA pins	1	1	1

Specifications subject to change without prior notice.

CAUTION
VARO!
VARNING
ADVERSEL
DANGER
VORSICHT

INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER SÄTTEILYLLE ÄLÄ KATSO SÄTEESEN.
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN.
USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UNSAETTELSE FOR STRÅLING.
INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
I.H.T. IEC 825

2. サービスモード

1. サービスモードへの入り方
   - [STOP]、[PLAY]、[NEXT]、[PREV] keyのうち2つ以上を押して電源を入れる。

2. モード0　(表示　P　0 0)
   状態：[FOCUS OFF] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]
   - [CUE] keyを押すとスレッドが外周へ移動します。
   - [REVIEW] keyを押すとスレッドが内周へ移動します。
   - [NEXT] keyを押すとモード1へ移行します。

3. モード1　(表示　P　0 1)
   状態：[FOCUS ON] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]
   - [NEXT] keyを押すとモード2へ移行します。
   - [PREV] keyを押すとモード0へ移行します。

4. モード2　(表示　P　0 2)
   状態：[FOCUS ON] [SPINDLE ON] [RADIAL OFF] [MUTE ON]
   - [NEXT] keyを押すとモード3へ移行します。
   - [PREV]keyを押すとモード0へ移行します。

5. モード3　(表示　P　0 3)
   状態：[FOCUS ON] [SPINDLE ON] [RADIAL ON] [MUTE OFF]
   - [PREV] keyを押すとモード2へ移行します。

   * サービスモードの全ての状態で以下のキーが有効です。
   1) [STOP] keyを押すとFLが全点灯します。
   2) [PAUSE] keyを押すとモデル番号とバージョンを表示します。

      Cd 67 : 10
      　　|
      プロセッサーバージョン番号

   3) [PLAY] keyを押すと通常（サービスモード以外）と同じ動作となります。
      ただし、異常が確認された時にエラー番号が表示されます。（例：Err 10）
   右の表を参考にしてください。

6. サービスモードの解除
   - 電源を切るとサービスモードが解除されます。

2. SERVICE MODE

1. How to enter into the Service Mode
   - Turn the power on while pressing at least 2 of [STOP], [PLAY], [NEXT], [PREV] keys.

2. Mode 0 (Display P00)
   Condition: [FOCUS OFF] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]
   - The Sled moves outside when pressing [CUE] key.
   - The Sled moves inside when pressing [REVIEW] key.
   - The function moves to Mode 1 when pressing [NEXT] key.

3. Mode 1 (Display P01)
   Condition: [FOCUS ON] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]
   - The function moves to Mode 2 when pressing [NEXT] key.
   - The function moves to Mode 0 when pressing [PREV] key.

4. Mode 2 (Display P02)
   Condition: [FOCUS ON] [SPINDLE ON] [RADIAL OFF] [MUTE ON]
   - The function moves to Mode 3 when pressing [NEXT] key.
   - The function moves to Mode 0 when pressing [PREV] key.

5. Mode 3 (Display P03)
   Condition: [FOCUS ON] [SPINDLE ON] [RADIAL ON] [MUTE OFF]
   - The function moves to Mode 2 when pressing [PREV] key.

   * The following key operation can be available at all of the conditions of the service mode.
   1) All of FL display light by pressing [STOP] key.
   2) Model Number and Version Nbr of the μ-processor are displayed by pressing [PAUSE] key.

      Cd 67 : 10
      　　|
      μ-Processor Version Nbr.

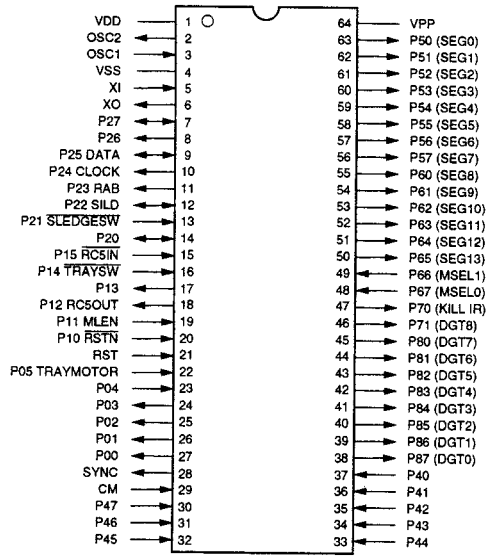
   3) The same as Normal operation (except Service mode) is performed by pressing [PLAY] key.
      However if some default is detected, an error code is displayed. (For example: Err 10)
      The content for each error code is shown below.

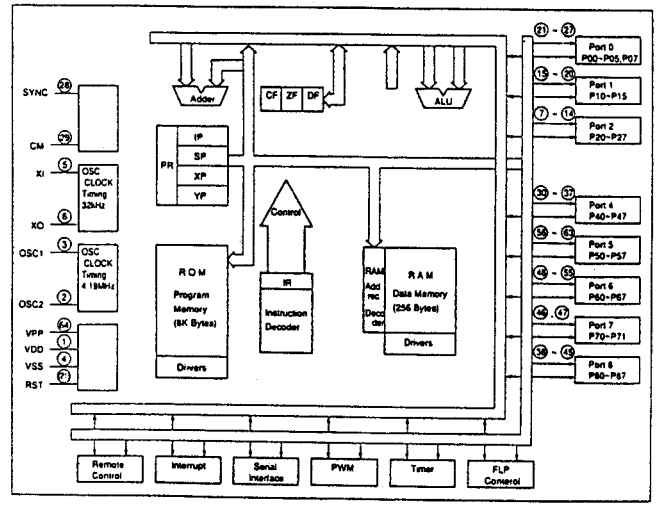
Error Code	Error
Err 02	FOCUS Error
Err 07	SUB CODE Error
Err 08	T. O. C Error
Err 09	DECODER Error
Err 10	RADIAL Error
Err 11, 12	SLED Error
Err 13	SPINDLE Error
Err 16 ~ 20	SEARCH Error
Err 30	DOOR Error
Err 31	TRAY Error
Err 32 ~ 47	KEY INPUT Error

6. Cancelling the Service Mode
   - The Service Mode is cancelled by turning the power off.

3. MICROPROCESSOR AND IC DATA

MN187164 (MICROPROCESSOR)





Pin Nbr	Pin Name	I/O	Function
1	Vdd	-	Power Supply +5V
2	OSC2	O	Clock out (8.0MHz)
3	OSC1	I	Clock in (8.0MHz)
4	Vss	-	GND 0V
5	XI	I	0V
6	XO	O	Not Used
7	P27	O	SAA7372 RESET
8	P26	O	Not Used
9	P25 DATA	I/O	Data Bus Data, SIDA
10	P24 CLOCK	O	Data Bus Clock, SICK
11	P23 RAB	O	SAA7372 RAB
12	P22 SILD	I/O	SAA7372 SILD (latch)
13	P21 $\overline{\text{SLEDGESW}}$	I	Sledge SW, SLSW
14	P20	O	Not Used
15	P15 $\overline{\text{RC5IN}}$	I	RC-5 code Input
16	P14 $\overline{\text{TRAYSW}}$	I	Tray In/Out SW, TRSW
17	P13	O	Not Used
18	P12 RC5OUT	O	RC-5 code Output
19	P11 MLEN	O	SM5872 MLEN (latch)
20	P10 $\overline{\text{RSTN}}$	O	SM5872 RSTN (reset)
21	RST	I	RESET
22	P05 TRAYMOTOR	O	Tray Motor
23	P04	O	Not Used
24	P03	O	Not Used
25	P02	O	Not Used
26	P01	I	Not Used
27	P00	I	Not Used
28	SYNC	O	Not Used
29	CM	I	0V
30	P47	I	Key Input, KEY 8
31	P46	I	Key Input, KEY 7
32	P45	I	Key Input, KEY 6

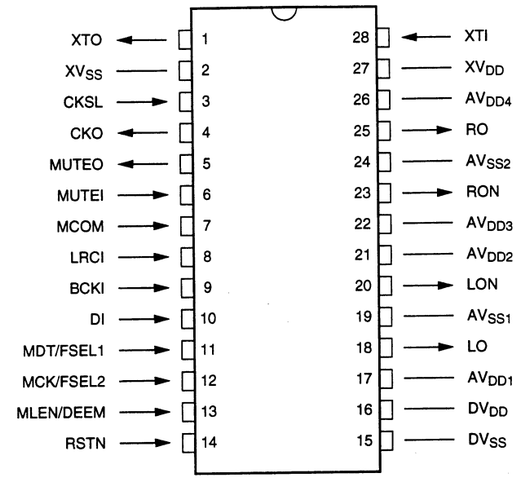
Pin Nbr	Pin Name	I/O	Function
33	P44	I	Key Input, KEY 5
34	P43	I	Key Input, KEY 4
35	P42	I	Key Input, KEY 3
36	P41	I	Key Input, KEY 2
37	P40	I	Key Input, KEY 1
38	P87 (DGT0)	O	FL Digit Data, G9
39	P86 (DGT1)	O	FL Digit Data, G8
40	P85 (DGT2)	O	FL Digit Data, G7
41	P84 (DGT3)	O	FL Digit Data, G6
42	P83 (DGT4)	O	FL Digit Data, G5
43	P82 (DGT5)	O	FL Digit Data, G4
44	P81 (DGT6)	O	FL Digit Data, G3
45	P80 (DGT7)	O	FL Digit Data, G2
46	P71 (DGT8)	O	FL Digit Data, G1
47	P70 KILL IR	O	Kill IR, N.C.
48	P67 MSEL0	I	Model Select SW 0
49	P66 MSEL1	I	Model Select SW 1
50	P65 (SEG13)	O	FL Segment Data, P1
51	P64 (SEG12)	O	FL Segment Data, P2
52	P63 (SEG11)	O	FL Segment Data, P3
53	P62 (SEG10)	O	FL Segment Data, P4
54	P61 (SEG9)	O	FL Segment Data, P5
55	P60 (SEG8)	O	FL Segment Data, P6
56	P57 (SEG7)	O	FL Segment Data, P7
57	P56 (SEG6)	O	FL Segment Data, P8
58	P55 (SEG5)	O	FL Segment Data, P9
59	P54 (SEG4)	O	FL Segment Data, P10
60	P53 (SEG3)	O	FL Segment Data, P11
61	P52 (SEG2)	O	FL Segment Data, P12
62	P51 (SEG1)	O	FL Segment Data, P1
63	P50 (SEG0)	O	FL Segment Data, F
64	Vpp	-	Power Supply -25

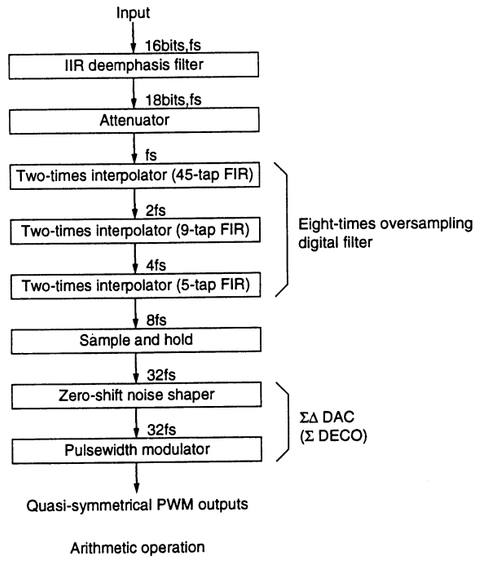
SAA7372GP (DIGITAL DECODING IC WITH RAM)

SYMBOL	PIN	DESCRIPTION
$V_{SSA}1$	1	analogue supply*
$V_{DDA}1$	2	analogue supply*
D1	3	unipolar current input (central diode signal input)
D2	4	unipolar current input (central diode signal input)
D3	5	unipolar current input (central diode signal input)
V_{RL}	6	reference input for ADC
D4	7	unipolar current input (central diode signal input)
R1	8	unipolar current input (satellite diode signal input)
R2	9	unipolar current input (satellite diode signal input)
IREFT	10	current reference for calibration ADC
V_{RH}	11	reference output from ADC
$V_{SSA}2$	12	analogue supply*
SELPLL	13	selects whether internal clock multiplier PLL is used
ISLICE	14	current feedback from data slicer
HFIN	15	comparator signal input
$V_{SSA}3$	16	analogue supply*
HFREF	17	comparator common mode input
IREF	18	reference current pin (nominally $V_{DD}/2$)
$V_{DDA}2$	19	analogue supply*
TEST1	20	test control input; this pin should be tied LOW
CRIN	21	crystal/resonator input
CROUT	22	crystal/resonator output
TEST2	23	test control input; this pin should be tied LOW
CL16	24	16.9344 MHz system clock output
CL11	25	11.2896 MHz clock output
RA	26	radial actuator output
FO	27	focus actuator output
SL	28	sledge control output
TEST3	29	test control input; this pin should be tied LOW
$V_{DD}1_P$	30	digital supply periphery*
DOBM	31	bi-phase mark output (externally buffered) (tri-state)
$V_{SS}1$	32	digital supply*
MOTO1	33	motor out 1 - versatile (tri-state)
MOTO2	34	motor out 2 - versatile (tri-state)
SBSY	35	subcode byte sync (tri-state)
SFSY	36	subcode frame sync (tri-state)
RCK	37	subcode clock input
SUB	38	P to W subcode bits (tri-state)
$V_{SS}2$	39	digital supply*
V5	40	versatile output pin
V4	41	versatile output pin
V3	42	versatile output pin (open drain)
KILL	43	kill output - programmable (open drain)
MISC	44	general purpose DAC output (tri-state)
DATA	45	serial data output (tri-state)
WCLK	46	word clock output (tri-state)
$V_{DD}2_P$	47	digital supply periphery*
SCLK	48	serial bit clock output (tri-state)
$V_{SS}3$	49	digital supply*
CL4	50	4.2336 MHz µP clock output
SDA	51	µP interface data I/O line (open drain output)
SCL	52	µP interface clock line
RAB	53	µP interface R/W and load control line (decoder part)
SILD	54	µP interface R/W and load control line (servo part)
N/C	55	No connection
$V_{SS}4$	56	digital supply*
RESET	57	power-on reset input (active low)
STATUS	58	request line/status register output (open drain)
$V_{DD}3_C$	59	digital supply core*
C2FAIL	60	indication of correction failure (open drain)
CFLG	61	correction flag output (open drain)
V1	62	versatile input pin
V2	63	versatile input pin
LDON	64	laser drive on output (open drain)

* Note: All supply pins must be connected to the same external power supply voltage.

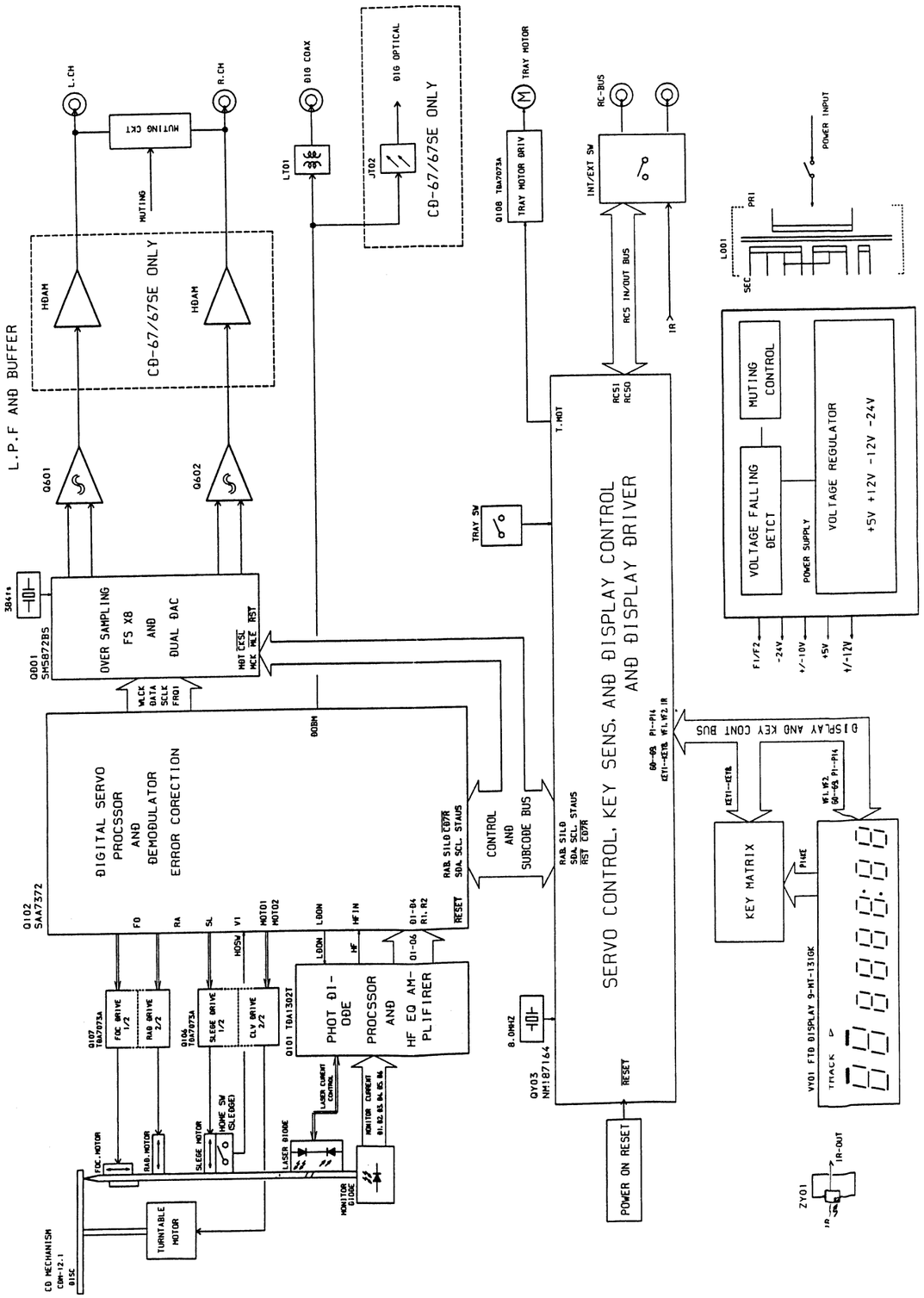
SM5872BS (DIGITAL FILTER AND D/A CONVERTER)





Pin Nbr	Pin Name	I/O	Function
1	XTO	O	Crystal oscillator output
2	XV_{SS}	-	GND (X'TAL)
3	CKSL	I	This pin should be tied HIGH for normal operation. Internal pull-up resistor
4	CKO	O	Clock output (384fs)
5	MUTEO	O	Mute detect output
6	MUTEI	I	Mute input. Internal pull-resistor
7	MCOM	I	Interface mode select input. Internal pull-up resistor : H = Interface mode L = Local
8	LRCI	I	Data sample rate clock input. Internal pull-up resistor : H = L ch L = R ch
9	BCKI	I	Bit clock input. Internal pull-up resistor
10	DI	I	Serial data input. Internal pull-up resistor
11	MDT/FSEL1	I	Microprocessor interface data input (and local mode frequency select input). Internal pull-up resistor
12	MCK/FSEL2	I	Microprocessor interface clock input (and local mode frequency select input). Internal pull-up resistor
13	MLEN/DEEM	I	Microprocessor interface latch enable input (and local mode deemphasis control input). Internal pull-up resistor
14	RSTN	I	Reset input. Internal pull-up resistor
15	DV_{SS}	-	GND (Digital)
16	DV_{DD}	-	Power supply (Digital)
17	AV_{DD1}	-	Power supply 1 (Analogue)
18	LO	O	Left-channel positive PWM output
19	AV_{SS1}	-	GND 1 (Analogue)
20	LON	O	Left-channel negative PWM output
21	AV_{DD2}	-	Power supply 2 (Analogue)
22	AV_{DD3}	-	Power supply 3 (Analogue)
23	RON	O	Right-channel negative PWM output
24	AV_{SS2}	-	GND 2 (Analogue)
25	RO	O	Right-channel positive PWM output
26	AV_{DD4}	-	Power supply 4 (Analogue)
27	XV_{DD}	-	Power supply (X'TAL)
28	XTI	I	Crystal oscillator or external clock input, 384fs (16.9344 MHz)

4. BLOCK DIAGRAM



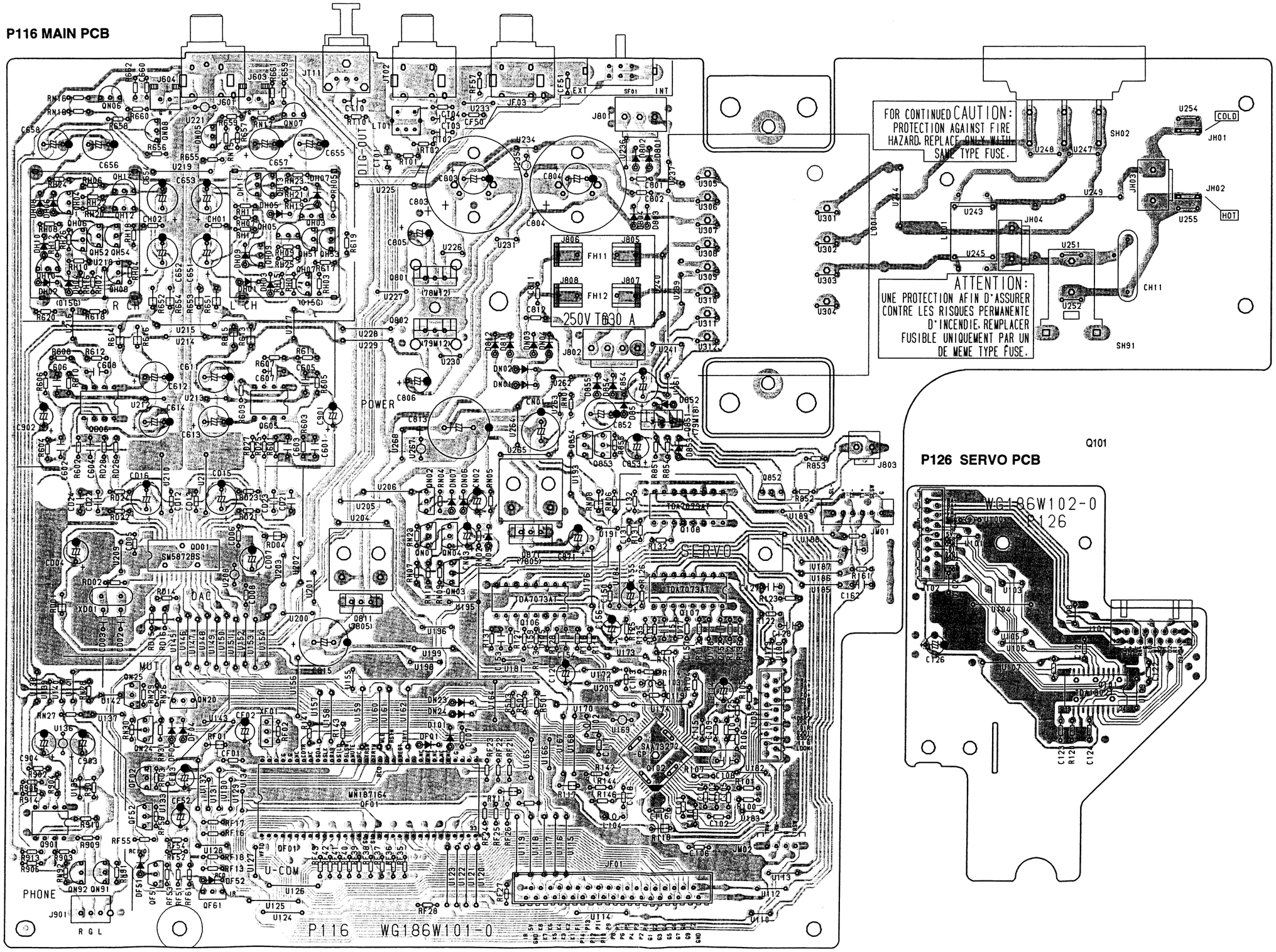
5. SCHEMATIC DIAGRAMS AND PARTS LOCATIONS (PATTERN SIDE)

QH10,QH04,QH06,QH52,QN06,QH54,QH08,QH14,QH12,QN08 QN05,QH11,QH13,QH09,QH05,QN07,QH03,QH51,QH53,QH07 Q801,Q802

Q606 QD01 Q605 Q811 QN01,QN03,QN04 Q871,Q106 Q854,Q853 Q851,Q108,Q107 Q852

QN92,QN91 QN25,QN24,QN20,QF02,QF52,QF51,QF61 QF01 Q102

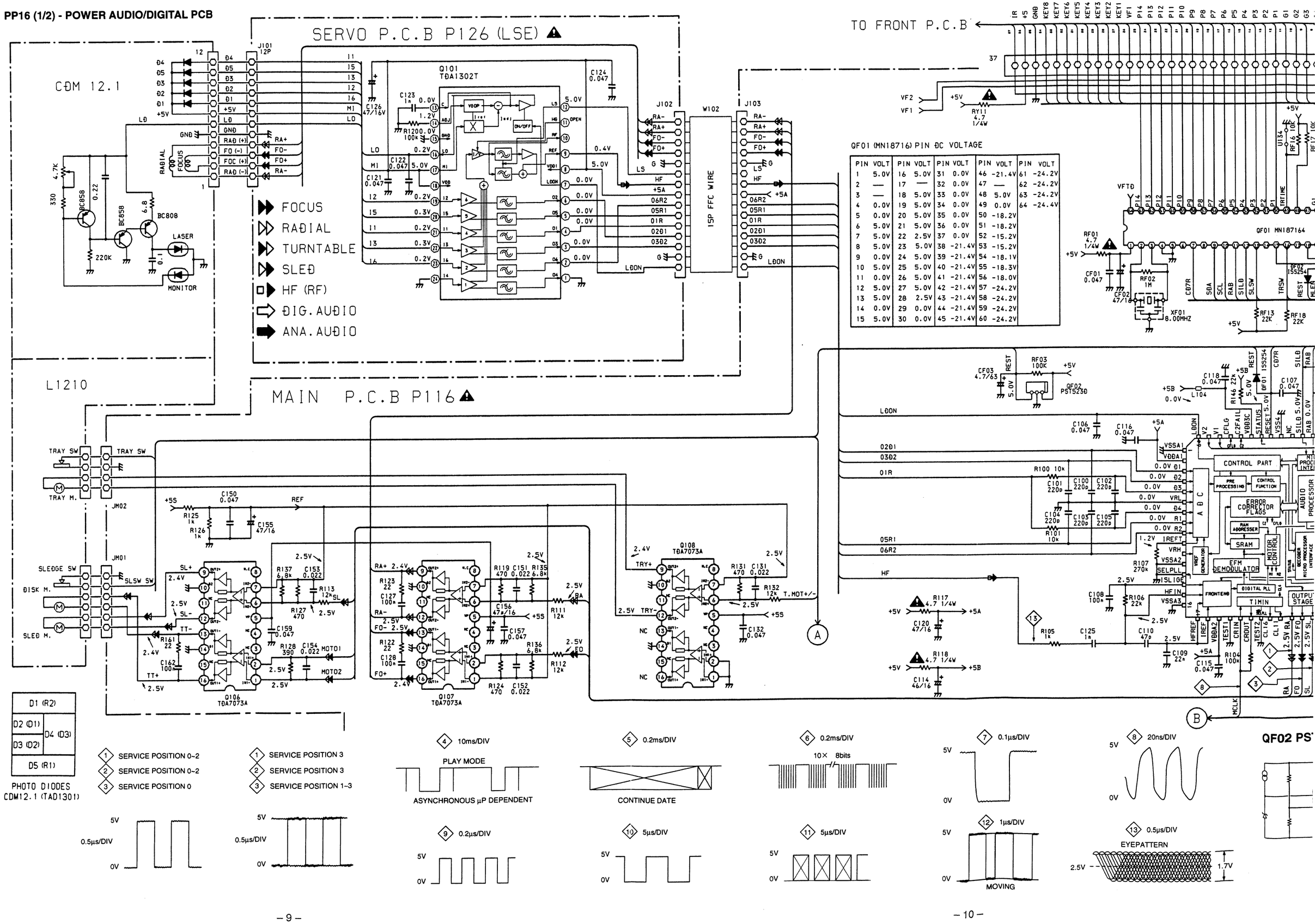
P116 MAIN PCB



Q101

P126 SERVO PCB

PP16 (1/2) - POWER AUDIO/DIGITAL PCB



PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT
1	5.0V	16	5.0V	31	0.0V	46	-21.4V	61	-24.2V
2	—	17	—	32	0.0V	47	—	62	-24.2V
3	—	18	5.0V	33	0.0V	48	5.0V	63	-24.2V
4	0.0V	19	5.0V	34	0.0V	49	0.0V	64	-24.4V
5	0.0V	20	5.0V	35	0.0V	50	-18.2V		
6	5.0V	21	5.0V	36	0.0V	51	-18.2V		
7	5.0V	22	2.5V	37	0.0V	52	-15.2V		
8	5.0V	23	5.0V	38	-21.4V	53	-15.2V		
9	0.0V	24	5.0V	39	-21.4V	54	-18.1V		
10	5.0V	25	5.0V	40	-21.4V	55	-18.3V		
11	0.0V	26	5.0V	41	-21.4V	56	-18.0V		
12	5.0V	27	5.0V	42	-21.4V	57	-24.2V		
13	5.0V	28	2.5V	43	-21.4V	58	-24.2V		
14	0.0V	29	0.0V	44	-21.4V	59	-24.2V		
15	5.0V	30	0.0V	45	-21.4V	60	-24.2V		

TO FRONT P.C.B

IR +5 GND KEY8 KEY7 KEY6 KEY5 KEY4 KEY3 KEY2 KEY1 VF1 P14 P13 P12 P11 P10 P9 P8 P7 P6 P5 P4 P3 P2 P1 G1 G2 G3 G4 G5 G6 G7 G8 G9 VF2 GND

JF01

VF2
VF1
+5V
RY11 4.7 1/4W

QF01 (MN18716) PIN DC VOLTAGE

PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT
1	5.0V	16	5.0V	31	0.0V	46	-21.4V	61	-24.2V
2	—	17	—	32	0.0V	47	—	62	-24.2V
3	—	18	5.0V	33	0.0V	48	5.0V	63	-24.2V
4	0.0V	19	5.0V	34	0.0V	49	0.0V	64	-24.4V
5	0.0V	20	5.0V	35	0.0V	50	-18.2V		
6	5.0V	21	5.0V	36	0.0V	51	-18.2V		
7	5.0V	22	2.5V	37	0.0V	52	-15.2V		
8	5.0V	23	5.0V	38	-21.4V	53	-15.2V		
9	0.0V	24	5.0V	39	-21.4V	54	-18.1V		
10	5.0V	25	5.0V	40	-21.4V	55	-18.3V		
11	0.0V	26	5.0V	41	-21.4V	56	-18.0V		
12	5.0V	27	5.0V	42	-21.4V	57	-24.2V		
13	5.0V	28	2.5V	43	-21.4V	58	-24.2V		
14	0.0V	29	0.0V	44	-21.4V	59	-24.2V		
15	5.0V	30	0.0V	45	-21.4V	60	-24.2V		

C124 0.047
J102
W102
J103
15P FFC WIRE
RA- RA+ FO- FO+ G LS HF +5A 06R2 05R1 01R 0201 0302 G LØDN
5.0V 0.4V 5.0V 0.0V 0.0V 0.0V 0.0V 0.0V

VFTØ
QF01 MN187164
RF01 4.7 1/4W
CF01 0.047
RF02 1M
CF02 47/16
XF01 8.00MHZ
RF13 22K
RF18 22K
RF14 22K SDA
RF15 22K SCL
RF16 22K RAB
RF17 22K SILB
U134
RF16 10K
RF17 10K
QF02 1SS254
RC-5 IN
RC-5 OUT

OPTICAL OUT CIRCUIT
ØDBM
RT10 220
OPT
JT11
CT10 0.022
CØ-67/67SE ONLY
CT01 0.1
RT01 560
LT01
JT02
RT02 680
CT03 2200p
CT04 0.1
CT02 4700p
COAXIAL
RC-5 IR-IN (FROM FRONT)

QF61 2SC2458 Y, GR
RF61 10K
SF01
EXT
INT
IR INT/EXT
QF52 1SS254
RF51 10K
RF52 100
QF51 2SA1048 Y, GR
CF52 10/25
RF54 10K
RF53 4.7K
CF50 220P
JF03
RC-5 IN/OUT
QF52 2SC2458 Y, GR
QF51 1SS254
CF51 0.1
RF55 10K
RF56 2.2K
RF57 22

CF03 4.7/63
RF03 100K
QF02 PST5230
C118 0.047
C107 0.047
L104
R146 22K
QF01 1SS254
REST
C07R
SILB
RAB
SCL
SDA
C106 0.047
C116 0.047
+5A
LØDN
0201
0302
01R
05R1
06R2
HF
R100 10k
C101 220p
C100 220p
C102 220p
C104 220p
C103 220p
C105 220p
R101 10k
R107 270k
C108 100n
R106 22k
C125 1n
C110 47p
C109 22n
R105 1k
R117 4.7 1/4W
C120 47/16
R118 4.7 1/4W
C114 46/16
R104 100k
C115 0.047
C119 0.047n
C113 100p
L103
L102
R503 100
R502 100
R501 100
C117 0.047
SCLK
WCLK
DATA
MISC
KILL
R116 12k
R115 12k
MOT02
MOT01
R114 100
ØDBM
RA FO SL +5B

CONTROL PART
MICRO PROCESSOR INTERFACE
PRE PROCESSING
CONTROL FUNCTION
ERROR CORRECTOR FLAGS
RAM ADDRESSER
SRAM
EFM DEMODULATOR
FRONTEND
DIGITAL PLL
TIMIN
MOTOR CONTROL
OUTPUT STAGE
AUDIO PROCESSOR
KILL
SERIAL DATA INTERFACE
SUBCODE PROCESSOR
EBU INTERFACE
PEAK DETECTION
A B C
VREF GENERATOR
Q107 SAA7372GP

PMUT
ØN23 1SS254
ØN24 1SS254
ØF03 1SS254
ØF04 1SS254
PØWN
RN31 10K
RN26 47K
RN30 10K
RN29 47K
QN24 2SA1048 Y, GR
QN25 2SA1048 Y, GR
RMUT
LMUT
RN27 100K
RN28 100K
-12V

Q108 TØA7073A
2.4V
TRY+
TRY-
2.5V
R131 470
C131 0.022
R132 12k T.MOT+/-
C132 0.047
+5S
NC
2.5V BA
R111 12k
2.5V FO
R112 12k

5 0.2ms/DIV
CONTINUE DATE

6 0.2ms/DIV
10× 8bits

7 0.1µs/DIV
5V
0V

8 20ns/DIV
5V
0V

QF02 PST994D
VCC ①
OUT ③
GND ②

10 5µs/DIV
5V
0V

11 5µs/DIV
5V
0V

12 1µs/DIV
5V
0V
MOVING

13 0.5µs/DIV
EYEPATTERN
2.5V
1.7V

安全上の注意：
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NOTE ON SAFETY:
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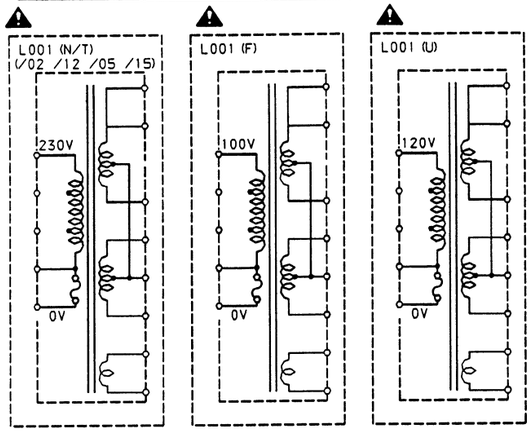
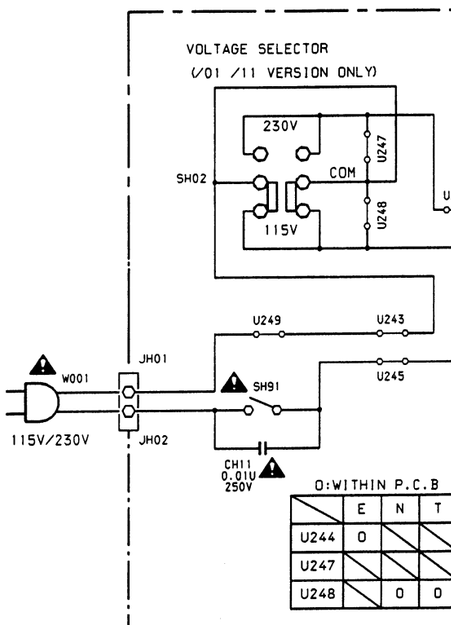
TRANSFORMER FOR OTHER VERSION



FUSE	FH11/FH12
E, N, T	T 630MA
U, F	1.6A

	CΘ-57	CΘ-67 CΘ-67SE
C803 C804	220UF/50V (RA2)	470UF/35V (ARS)
C805 C806	100UF/16V (RA2)	470UF/16V (RA2)

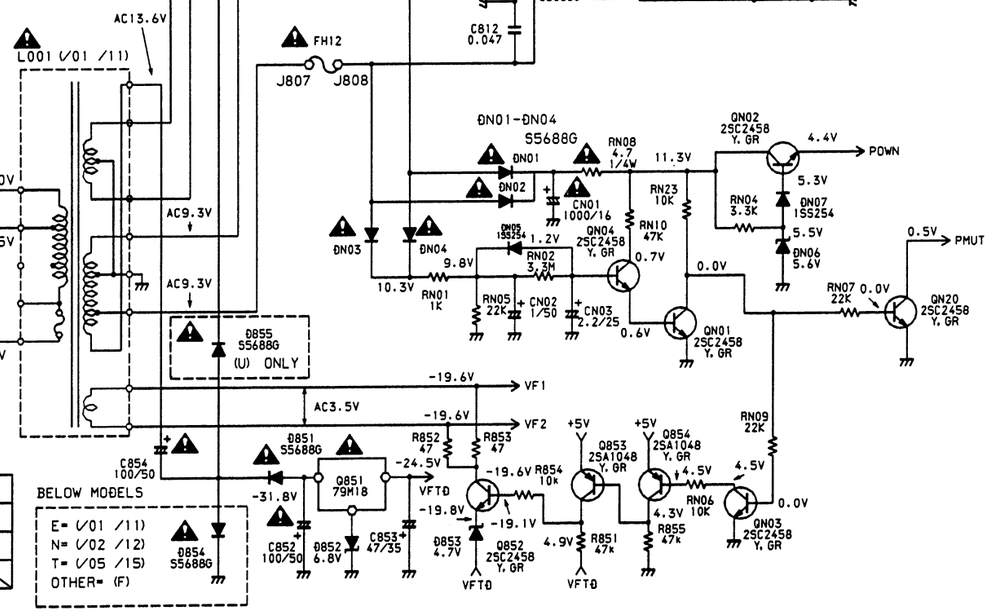
VOLTAGE SELECTOR
(/01 /11 VERSION ONLY)

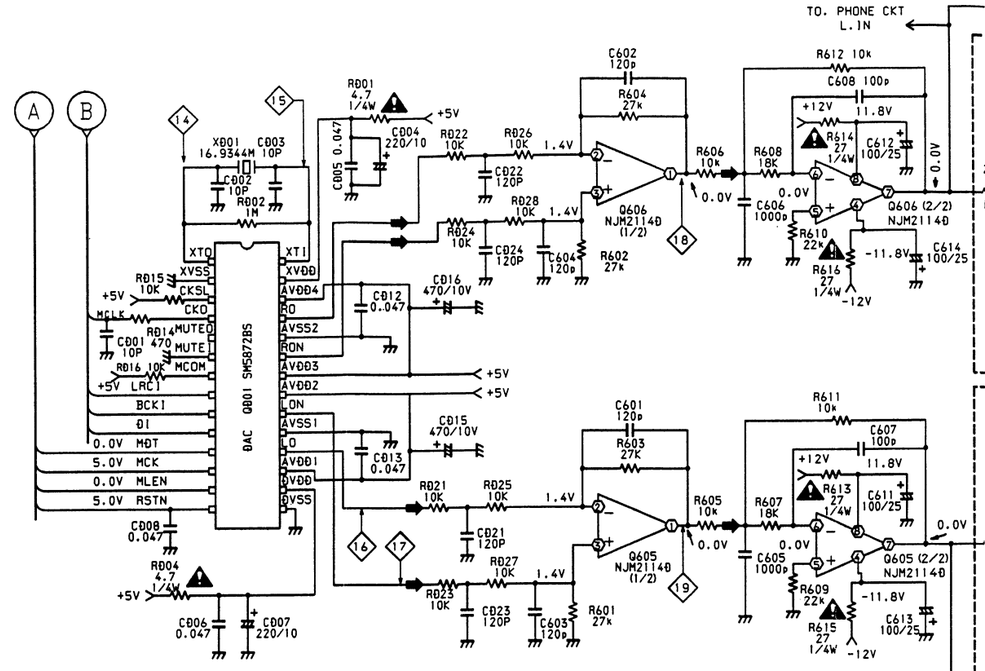


O:WITHIN P.C.B

	E	N	T	F	U
U244	O			O	O
U247				O	O
U248		O	O		

BELOW MODELS
E= (/01 /11)
N= (/02 /12)
T= (/05 /15)
OTHER= (F)



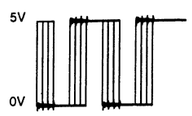


P136

14 20ns/DIV

15 20ns/DIV

16 17 0.2µs/DIV



18 0.5ms/DIV

19 0.5ms/DIV

安全上の注意：
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NOTE ON SAFETY:
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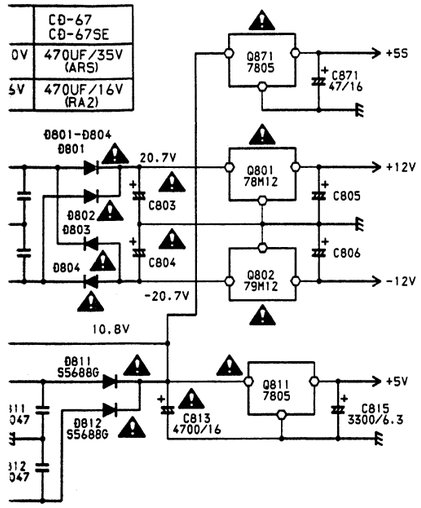
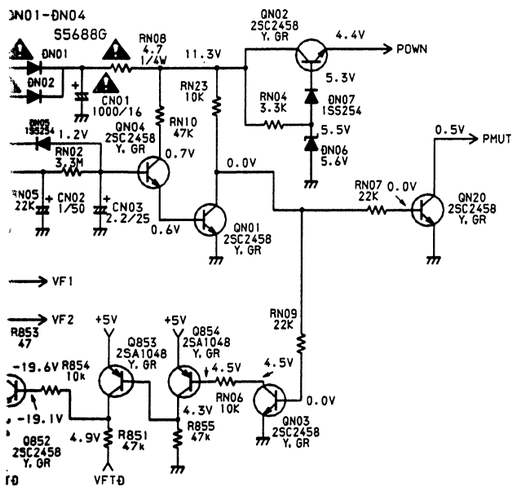
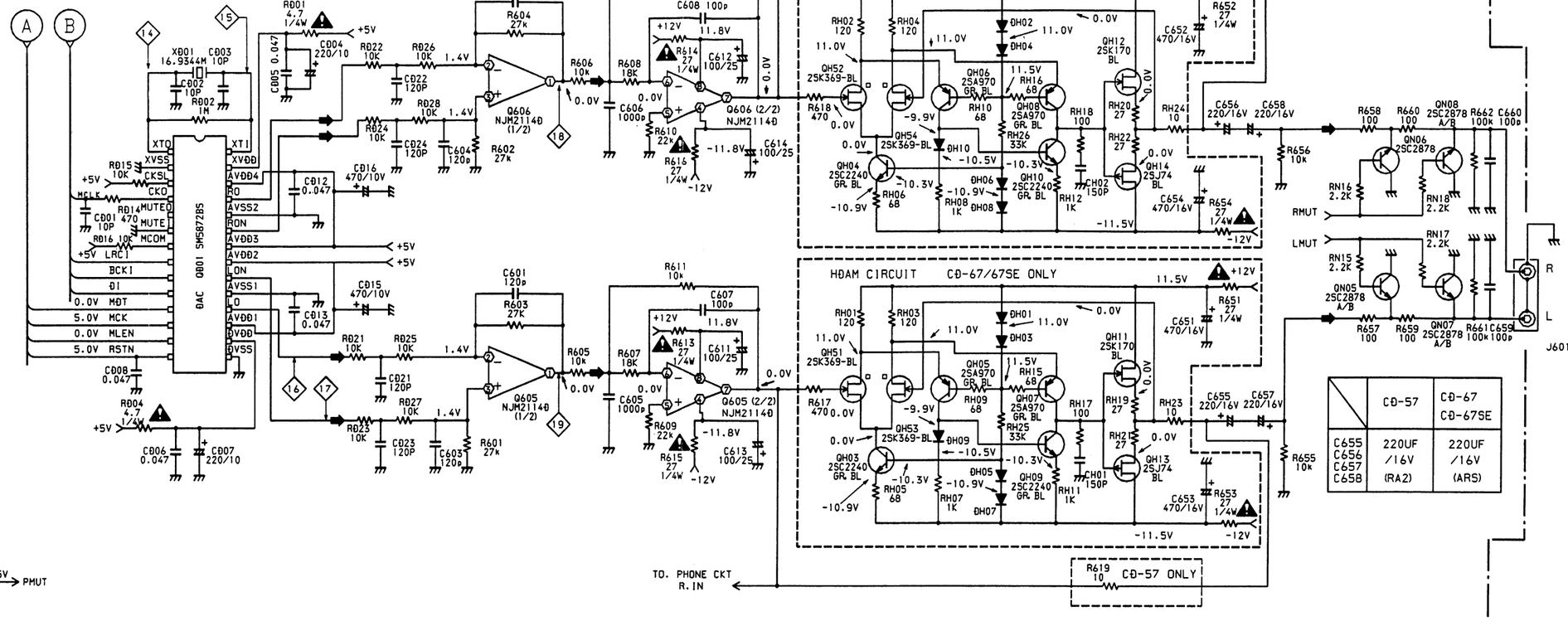
to replace any part marked with symbol ⚠. An
(other than original type), may increase risk of

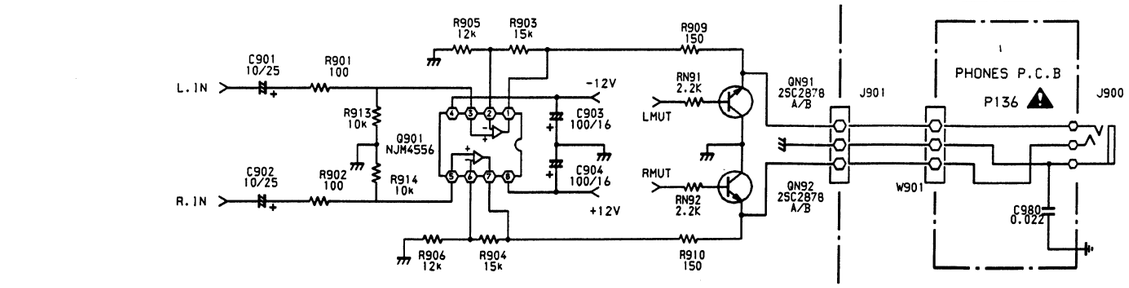
	CD-67 CD-67SE
0V	470UF/35V (ARS)
5V	470UF/16V (RA2)



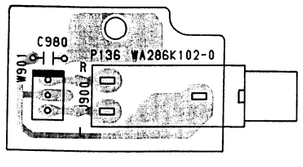




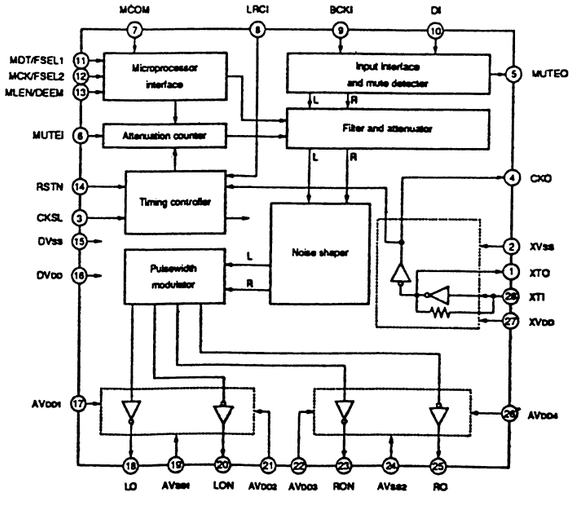
	CD-57	CD-67 CD-67SE
C655 C656 C657 C658	220UF /16V (RA2)	220UF /16V (ARS)

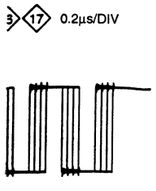


P136 PHONES PCB



QD01 SM5872BS





0.2µs/DIV

0.5ms/DIV

0.5ms/DIV

安全上の注意：
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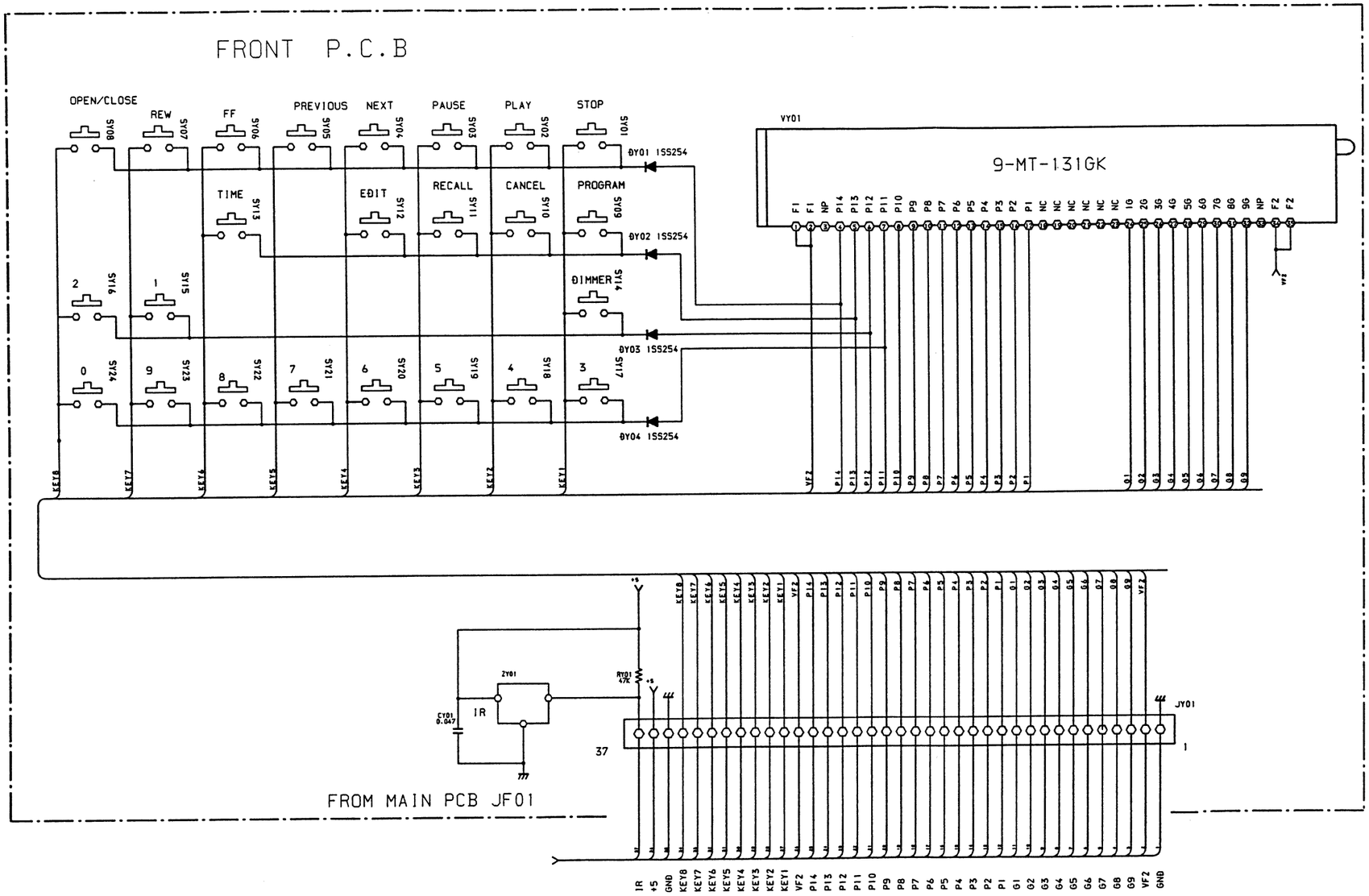
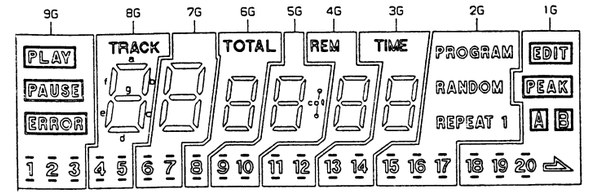


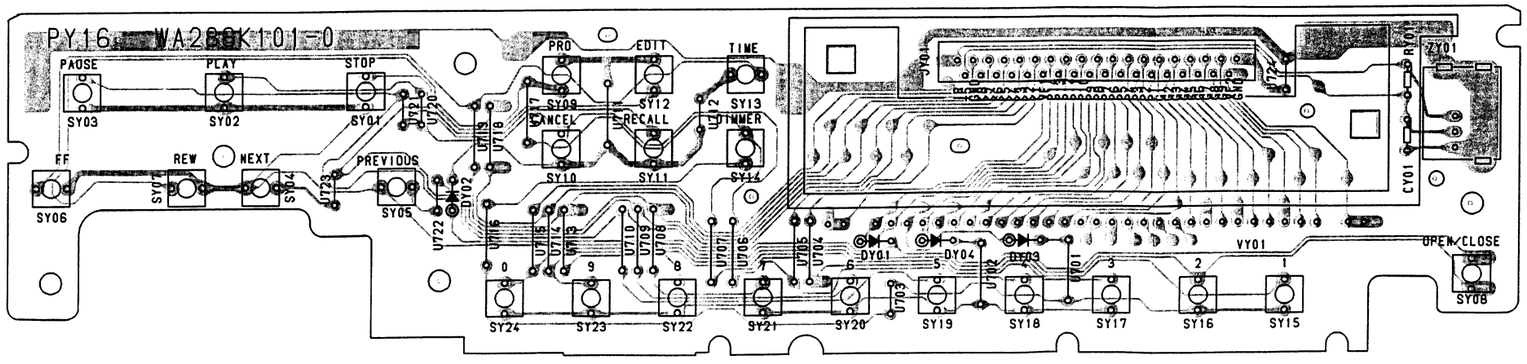


ANODE CONNECTION

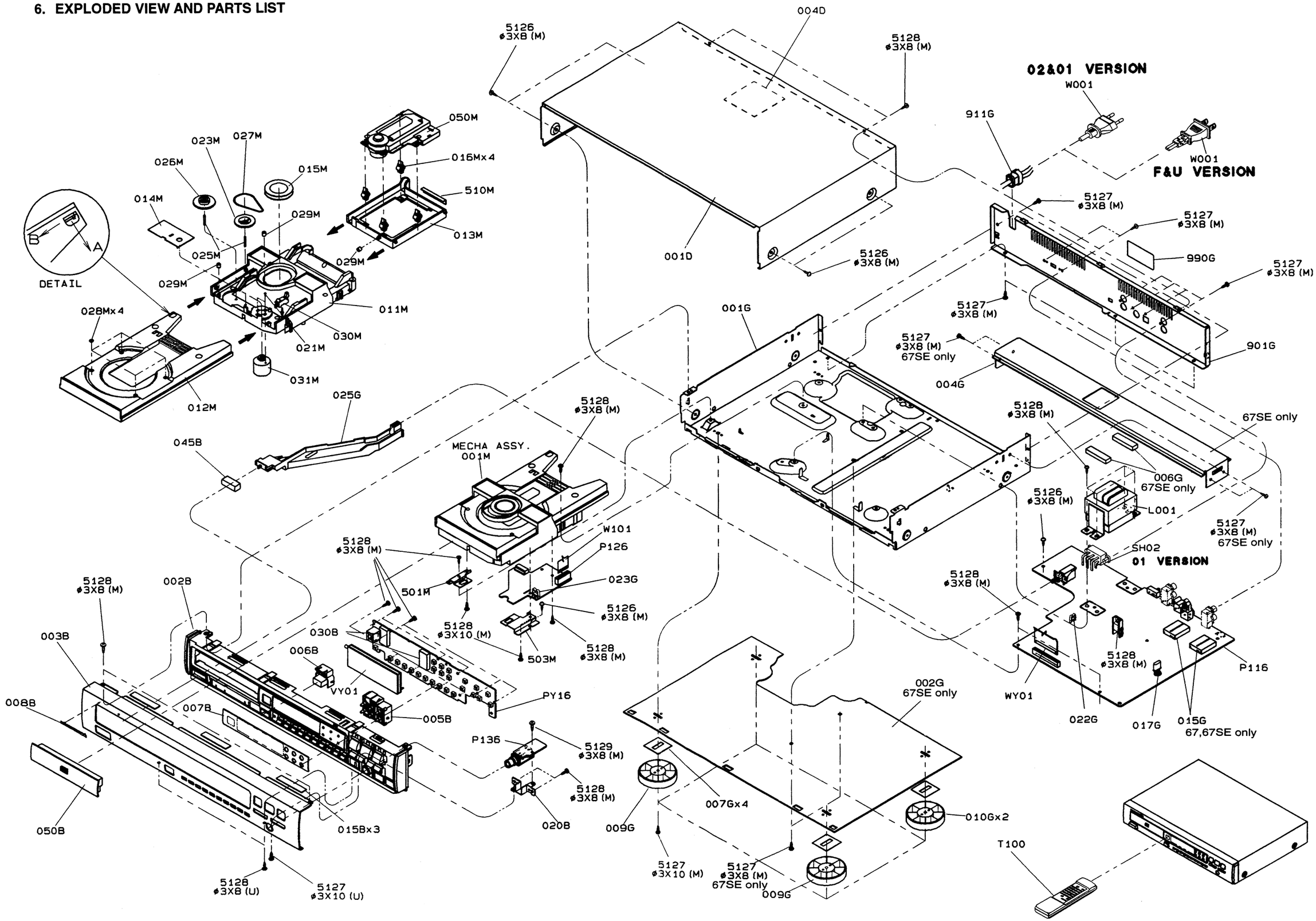
	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	-	a	a	a	a	a	a	PROGRAM	PEAK
P2	(1)	b	b	b	b	b	b	15	18
P3	1	c	c	c	c	c	c	(15)	(18)
P4	(1)	d	d	d	d	d	d	1	4
P5	-	e	e	e	e	e	e	REPEAT	B
P6	ERROR	f	f	f	f	f	f	-	A
P7	(2)	g	g	g	g	g	g	(15)	(18)
P8	2	(4)	-	TOTAL	col	REM	(13)	(16)	(19)
P9	(2)	4	(6)	-	(9)	(11)	13	16	19
P10	(3)	(4)	6	(8)	9	11	(13)	(16)	(19)
P11	3	(5)	(6)	8	(9)	(11)	(14)	(17)	(20)
P12	(3)	5	(7)	(8)	(10)	(12)	14	17	20
P13	PLAY	(5)	7	-	10	12	(14)	(17)	(20)
P14	PAUSE	TRACK	(7)	-	(10)	(12)	TIME	RANDOM	EDIT

9-MT-131GK
ANODE CONNECTION

PY16 FRONT PCB



6. EXPLODED VIEW AND PARTS LIST

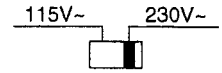


[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX: Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
002B	BLACK	4822 464 10206	CHASSIS FRONT PL BLK	185W105020
002B	GOLD	4822 464 10207	CHASSIS FRONT PL GLD	185W105120
003B	CD-57 BLACK	4822 459 04341	FRONT PANEL AL CD-57 BLK	185W248010
003B	CD-67 BLACK	4822 459 04342	FRONT PANEL AL CD-67 BLK	186W248010
003B	CD-67 GOLD	4822 459 04343	FRONT PANEL AL CD-67 GLD	186W248020
003B	CD-67SE BLACK	4822 459 04344	FRONT PANEL AL CD-67 SE BLK	187W248010
003B	CD-67SE GOLD	4822 459 04345	FRONT PANEL AL CD-67 SE GLD	187W248020
005B		4822 410 62898	BUTTON D3 GOLD HOT STAMPED	285K270020
006B	BLACK	4822 410 62899	BUTTON OPEN/CLOSE BLK	285K270030
006B	GOLD	4822 410 62931	BUTTON OPEN/CLOSE GLD	285K270130
007B		4822 450 62145	WINDOW CD-57/67 WITH REMOTE	285K158010
008B	BLACK		BADGE MARANTZ BADGE (BL)	185J251010
008B	GOLD		BADGE MARANTZ BADGE (GL)	185J251110
045B	BLACK	4822 410 62744	BUTTON POWER BLACK	285K270010
045B	GOLD	4822 410 62745	BUTTON POWER GOLD	285K270110
050B	BLACK	4822 454 30491	TRAY ESCUTCHEON BLACK	285K063010
050B	GOLD	4822 454 30494	TRAY ESCUTCHEON BLACK	285K063110
001D	BLACK		LID TOP COVER BLACK	185W257010
001D	GOLD		LID TOP COVER GOLD	185W257110
009G		4822 462 42045	LEG, (GOLD HOT STAMP) FRONT	183J057010
010G		4822 462 42048	LEG, (GOLD HOT STAMP) REAR	183J057110
025G		4822 403 70989	LINK, POWER SW.	285K121010
001M			MECHANISM SAM LOADER 1210/11	271K304510
011M		4822 444 50678	CHASSIS 3104 144 01230	271K105030
012M		4822 444 50679	TRAY 3104 144 01420 SLIDE	271K163010
013M		4822 464 50895	CHASSIS 3104 144 00450 SUBCHASSIS	271K105040
015M		4822 402 61412	CLAMPER 3104 147 10030 ASSY	271K005010
016M		4822 325 50215	BUFFER 3104 144 00650 SUSPENSION	271K056010
021M		4822 502 12001	SCREW 2522 201 00002 SCR.TORXM2X4	271K010010
023M		4822 528 81465	PULLEY 3104 144 00400 PULLEY	271K262010
026M		4822 528 81464	GEAR 3104 144 00390 DRIVE PINION	271K058010
027M		4822 358 31168	BELT 3104 144 00900 DRIVE BELT	271K264010
028M		4822 325 80511	BUFFER 3104 144 01390 ORNAMENTA L TU	271K056030
029M		4822 325 60379	BUFFER 3104 144 00810 DAMPING G ROMME	271K056020
030M		4822 276 13222	MINI SWITCH 8204 055 29120 SINMEI QA S1229	*SM000300R
031M		4822 361 21492	D.C MOTOR 3104 148 00270 RF-310T A-1140	*MM000660R
050M		4822 691 30278	MECHANISM 3104 147 00300 CDM12.1 EX.WIR	271K304560
⚠W001	U		A.C POWER CORD (U) MAYOR UL/CSA	YC01800580
⚠W001	/05/15		A.C POWER CORD MAIN BS 250V5A	YC02000700
⚠W001	/01/02/11//12		A.C POWER CORD MAIN N	YC01800440
⚠W001	F		A.C POWER CORD AC (F/E)	YC02000770
WY01	/01/02/05/11 /12/15, F		JUMPER LEAD, SUMI-CARD37P/120MM	YU37120500
WY01	U		JUMPER LEAD, SUMI-CARD37P/120MM	YU37120520
			PACKING	
001T	U		USER MANUAL CD-67/67SE COMB.	186W851250
001T	/01/02/05 /11/12/15	4822 736 14664	USER MANUAL CD-57/67/67SE COM.	186W851310
001T	F		USER MANUAL CD-67/67SE COMB.	186W851110
B001			BATTERY UM-3NEPH/2S AN D 2P	ZF23302000
J081	CD-57	4822 321 21438	CONNECTIVE CORRCA ST. 1M	ZD01000330
J081	CD-67/67SE	4822 321 62205	CONNECTIVE CORD RCA ST. 1M (GOLD)	ZD01000550
J082	/01/11		JACK AC ADAPTER PLUG 6A 250V	YJ04002310
T100		4822 218 10527	UNIT KIT IR COMANDER (RC-63CD)	ZK286K0010

VOLTAGE CONVERSION (/01B version only)
To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

VOLTAGE SELECTOR



CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

7. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R＊＊＊ : (1) GD05 x x x 140, Carbon film fixed resistor, ±5% 1/4W
R＊＊＊ : (2) GD05 x x x 160, Carbon film fixed resistor, ±5% 1/6W

① ——— Resistance value

Examples ;
① Resistance value

0.1 Ω.....001	10 Ω.....100	1 kΩ.....102	100 kΩ.....104
0.5 Ω.....005	18 Ω.....180	2.7 kΩ.....272	680 kΩ.....684
1 Ω.....010	100 Ω.....101	10 kΩ.....103	1 MΩ.....105
6.8 Ω.....068	390 Ω.....391	22 kΩ.....223	4.7 MΩ.....475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C＊＊＊ : CERAMIC CAP.
(1) DD1x x x x 370, Ceramic capacitor
Disc type
Temp. coeff. P350 ~ N1000, 50V
① ② Capacity value
Tolerance

Examples ;
① Tolerance (Capacity deviation)
± 0.25pF 0
± 0.5pF 1
± 5% 5
＊Tolerance of COMMON PARTS handled here are as follows :
0.5pF ~ 5pF ..... ± 0.25pF
6pF ~ 10pF ..... ± 0.5pF
12pF ~ 560pF ..... ± 5%
② Capacity value

0.5 pF 005	3 pF 030	100 pF 101
1 pF 010	10 pF 100	220 pF 221
1.5 pF 015	47 pF 470	560 pF 561

C＊＊＊ : CERAMIC CAP.
(1) DK16 x x x 300, High dielectric constant ceramic capacitor
① Disc type
Temp. chara. 2B4, 50V
Capacity value

Examples ;
① Capacity value

100 pF 101	1000 pF 102	10000 pF 103
470 pF 471	2200 pF 222	

C＊＊＊ : ELECTROLY CAP. (±), FILM CAP. (∓)
(1) EA x x x x x 10, Electrolytic capacitor
One-way lead type, Tolerance ± 20%
① ② Working voltage
Capacity value

Examples ;
① Capacity value

0.1 µF 104	4.7 µF 475	100 µF 107
0.33 µF 334	10 µF 106	330 µF 337
1 µF 105	22 µF 226	1100 µF 118
		2200 µF 228

② Working voltage

6.3 V 006	25 V 025
10 V 010	35 V 035
16 V 016	50 V 050

(2) DF15 x x x 350 → Plastic film capacitor
DF15 x x x 310 → One-way type, Mylar ± 5% 50V
DF16 x x x 310 → Plastic film capacitor
One-way type, Mylar ± 10% 50V
① Capacity value

Examples ;
① Capacity value

0.001 µF (1000pF) 102	0.1 µF 104
0.0018 µF 182	0.56 µF 564
0.01 µF 103	1 µF 105
0.015 µF 153	

NOTE : 1) The above CODES (R＊＊＊, R＊＊＊, C＊＊＊, C＊＊＊ and C＊＊＊) are omitted on the schematic diagram in some case.
2) On the occasion, be confirmed common parts on the parts list.
3) Refer to "Common Parts List" for the other common parts (**R105, DD4, DK4**).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors aer as follows :

1. KOA Corporation

Part No.	Type No.	Description
NH05 x x x 140	→ RF25S x x x x Ω J	(± 5% 1/4W)
NH05 x x x 120	→ RF50S x x x x Ω J	(± 5% 1/2W)
NH85 x x x 110	→ RF73B2A x x x x Ω J	(± 5% 1/10W)
NH85 x x x 140	→ RF73B2E x x x x Ω J	(± 5% 1/4W)

＊ Resistance value — Resistance value (0.1 - 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No.	Type No.	Description
NF05 x x x 140	→ ERD–2FCJ x x x	(± 5% 1/4W)
RF05 x x x 140		
NF02 x x x 140	→ ERD–2FCG x x x	(± 2% 1/4W)
RF02 x x x 140		

＊ Resistance value — ＊ Resistance value

Examples :
＊ Resistance value

0.1 Ω.....001	10 Ω.....100	1 kΩ.....102	100 kΩ.....104
0.5 Ω.....005	18 Ω.....180	2.7 kΩ.....272	680 kΩ.....684
1 Ω.....010	100 Ω.....101	10 kΩ.....103	1 MΩ.....105
6.8 Ω.....068	390 Ω.....391	22 kΩ.....223	4.7 MΩ.....475

ABBREVIATION AND MARKS

1	ANT.	: ANTENNA	2	BATT.	: BATTERY
3	CAP.	: CAPACITOR	4	CER.	: CERAMIC
5	CONN.	: CONNECTING	6	DIG.	: DIGITAL
7	HP	: HEADPHONE	8	MIC.	: MICROPHONE
9	µ–PRO	: MICROPROCESSOR	10	REC.	: RECORDING
11	RES.	: RESISTOR	12	SPK	: SPEAKER
13	SW	: SWITCH	14	TRANSF.	: TRANSFORMER
15	TRIM.	: TRIMMING	16	TRS.	: TRANSISTOR
17	VAR.	: VARIABLE	18	X'TAL	: CRYSTAL
19			20		
21			22		
23			24		
25			26		
27			28		
29			30		

NOTE ON SAFETY :

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意：

⚠ がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
Q852		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
Q853		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
Q854		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
Q901		4822 209 82362	IC NJM4556D	HC10016090
QD01		4822 209 32762	IC SM5872BS DIG.FIL & DAC	HC10010350
QF01		4822 209 15166	MAIN CPU MN187164	HU186WA000
QF02		4822 209 15167	IC RESET IC PST994D	HC10073550
QF51		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
QF52		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
QF61		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311,2SC1740S	HT30001000
QH03	CD-67/67SE	4822 130 43233	TRS. 2SC2240 (GR OR BL)	HT322402A0
QH04	CD-67/67SE	4822 130 43233	TRS. 2SC2240 (GR OR BL)	HT322402A0
QH05 ~ QH08	CD-67/67SE	4822 130 42949	TRS. 2SA970 (GR OR BL)	HT109702A0
QH09	CD-67/67SE	4822 130 43233	TRS. 2SC2240 (GR OR BL)	HT322402A0
QH10	CD-67/67SE	4822 130 43233	TRS. 2SC2240 (GR OR BL)	HT322402A0
QH11	CD-67/67SE	5322 130 41844	F.E.T. 2SK170 BL	HF201701G0
QH12	CD-67/67SE	5322 130 41844	F.E.T. 2SK170 BL	HF201701G0
QH13	CD-67/67SE	4822 130 62649	F.E.T. 2SJ74 BL	HF100741G0
QH14	CD-67/67SE	4822 130 62649	F.E.T. 2SJ74 BL	HF100741G0
QH51 ~ QH54	CD-67/67SE	4822 130 42839	F.E.T. 2SK369BL	HF203691B0
QN01 ~ QN04		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
QN05 ~ QN08		4822 130 43818	TRS. 2SC2878 A OR BRANK	HT328782A0
QN20		4822 130 42298	TRS. 2SC536SP, 2SC2458, 2SC3311, 2SC1740S	HT30001000
QN24		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
QN25		4822 130 42715	TRS. 2SA608SP, 2SA1048, 2SA1309, 2SA933S	HT10001000
QN91		4822 130 43818	TRS. 2SC2878 A OR BRANK	HT328782A0
QN92		4822 130 43818	TRS. 2SC2878 A OR BRANK	HT328782A0
			P116-RESISTORS	
▲R614		4822 116 83036	27 Ω ±2% 1/4W	RF02270140
▲R615		4822 116 83036	27 Ω ±2% 1/4W	RF02270140
▲R616		4822 116 83036	27 Ω ±2% 1/4W	RF02270140
▲R651 ~ ▲R654	CD-67/67SE	4822 116 83036	27 Ω ±2% 1/4W	RF02270140
▲RD01	CD-67/67SE	4822 052 10478	4.7 Ω ±5% 1/4W	RF05047140
▲RD04	CD-67/67SE	4822 052 10478	4.7 Ω ±5% 1/4W	RF05047140
▲RF01		4822 052 10478	4.7 Ω ±5% 1/4W	RF05047140
▲RN08		4822 052 10478	4.7 Ω ±5% 1/4W	RF05047140
▲RY11		4822 052 10478	4.7 Ω ±5% 1/4W	RF05047140
R***			**P116-RESISTORS(COMMON)** CARBON FILM FIXED RESISTOR, ±5% 1/6W: R100, R101, R104~R107, R111~R116, R119, R122~R128, R131, R132, R135, R136, R137, R141~R144, R146, R161, R501, R502, R503, R601~R612, R617, R618, R619, R620, R655~R662, R851~R855, R901~R906, R909, R910, R913, R914, RD14, RD15, RD16, RD21~RD28, RF02, RF03, RF13, RF16, RF17, RF18, RF51~RF57, RF61, RH01~RH12, RH15~RH26, RN01, RN02, RN04~RN07, RN09, RN10, RN15~RN18, RN23, RN26~RN31, RN91, RN92, RT01, RT02, RT10	

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
			P116-MISCELLANEOUS	
▲FH11	CD-57/01/02/05		FUSE T 630MA 250V SL	FS10063210
▲FH11	F, U	4822 253 40196	FUSE 1.6A 125V GGS	FS10160310
▲FH11	CD-67/01/02/05/11/12/15	4822 070 36301	FUSE 630MA 250V BS LISTED	FS10063850
▲FH12	CD-57/01/02/05		FUSE T 630MA 250V SL	FS10063210
▲FH12	F, U	4822 253 40196	FUSE 1.6A 125V GGS	FS10160310
▲FH12	CD-67/01/02/05/11/12/15	4822 070 36301	FUSE 630MA 250V BS LISTED	FS10063850
J103		4822 265 41351	JACK ZC-015 15P-CONNECTER	YJ07007960
J601	CD-57		TERMINAL 1L2P W/R A.OUT	YT02021210
J601	CD-67/67SE	4822 265 31045	TERMINAL RCA P-JACK W/R GOLD	YT02021080
JF01		4822 265 61251	JACK 37 PIN FFC	YJ06011070
JF03		4822 267 41009	TERMINAL 2P RCA PIN JACK	YT02020890
JH01			TERMINAL AC CORD ON PCB	YL01010250
JH02			TERMINAL AC CORD ON PCB	YL01010250
JM01		4822 265 30473	PLUG 6P PLUG B6B-XH-A	YP06003420
JM02		4822 265 30482	PLUG 4P PLUG B4B-XH-A	YP06003440
JT02	CD-57	4822 265 10328	TERMINAL 1L1P BLK	YT02010780
JT02	CD-67/67SE	4822 290 81638	TERMINAL 14X14 RA 1L1P BLK	YT02010790
JT11	CD-67/67SE	4822 267 31369	OPT. CONNECTOR GP1F32T	YJ15000090
▲L001	CD-57/02/05	4822 146 10645	POWER TRANSF.	TS15740010
▲L001	CD-57/01	4822 146 10644	POWER TRANSF.	TS15740020
▲L001	CD-67, U		POWER TRANSF.	TS15740030
▲L001	CD-67/02/05	4822 146 10645	POWER TRANSF.	TS15740010
▲L001	CD-67/01	4822 146 10644	POWER TRANSF.	TS15740020
▲L001	CD-67, F		POWER TRANSF.	TS15740040
▲L001	CD-67/12/15	4822 146 10646	POWER TRANSF.	TS15740050
▲L001	CD-67/11	4822 146 10647	POWER TRANSF.	TS15740060
▲L001	CD-67SE, U		POWER TRANSF.	TS15740070
▲L001	CD-67SE, F		POWER TRANSF.	TS15740080
L102		4822 526 10584	FERRITE CORE	FC90090010
L103		4822 526 10584	FERRITE CORE	FC90090010
L104		4822 526 10584	FERRITE CORE	FC90090010
LT01		4822 142 60388	PULSE TRANSF.	TP41042010
▲SF01		4822 277 21824	SLIDE SWITCH	SS02021620
▲SH02	/01/11	4822 277 21763	SLIDE SWITCH	SS02021240
▲SH91		4822 276 13364	PUSH SWITCH	SP01011990
XD01		4822 242 72334	CRYSTAL 16.9344MHZ	JX16002260
XF01		4822 242 72066	SERAMIC VIB. CST8.0MHZ (MT) TAPING	FQ08004010
			P126-HP CIRCUIT BOARD	
			P126-CAPACITORS	
C121 ~ C124		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C126		4822 124 41539	ELECT. 47 µF M 16V	OA47601620
			P126-SEMICONDUCTORS	
Q101		4822 209 33992	IC TDA1302T SERVO PRIAMP	HC10136490
			P116-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RESISTOR, ±5% 1/6W: R120	
			P126-MISCELLANEOUS	
J101		4822 265 41349	JACK T0C-L12X-A1 12P-CONNECTER	YJ07007950
J102		4822 265 41351	JACK ZC-015 15P-CONNECTER	YJ07007960
			P136-CIRCUIT BOARD	
			P136-CAPACITORS	
C151 ~ C154			FILM 0.022 µF ±0.5% M 50V	DF15223350
C980		4822 122 30103	CER. 0.022 µF +80%-20% 50V	DK18223310
			P136-MISCELLANEOUS	
J900	BLACK	4822 267 31691	JACK HEAD PHONE HLJ0540-01-410	YJ01003870
J900	GOLD	4822 267 31692	JACK HEAD PHONE HLJ0540-01-430	YJ01003880

[VERS.:VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
			P116-MAIN CIRCUIT BOARD	
			P116-CAPACITORS	
C100				
S		4822 126 10408	CER. 220 PF	DA16221110
C105				
C106		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C107		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C109		4822 122 40588	CER. 0.022 µF	DA17223110
C110		4822 126 10513	CER. 47 PF	DA15470110
C113		4822 126 10364	CER. 100 PF	DA16101110
C114		4822 124 41539	ELECT. 47 µF M 16V	OA47601620
C115				
S		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C119				
C120		4822 124 41539	ELECT. 47 µF M 16V	OA47601620
C125		4822 122 33639	CER. 1000 PF	DA16102110
C132		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C150		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C155		4822 124 41539	ELECT. 47 µF M 16V	OA47601620
C156		4822 124 41539	ELECT. 47 µF M 16V	OA47601620
C157		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C159		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C601	CD-57	4822 126 11559	CER. 120 PF ± 0.5% 50V BLK	DD15121300
C601	CD-67/67SE	4822 121 70544	FILM 120 PF ± 0.5% 100V	OF15121540
C602	CD-57	4822 126 11559	CER. 120 PF ± 0.5% 50V BLK	DD15121300
C602	CD-67/67SE	4822 121 70544	FILM 120 PF ± 0.5% 100V	OF15121540
C603	CD-57	4822 126 11559	CER. 120 PF ± 0.5% 50V BLK	DD15121300
C603	CD-67/67SE	4822 121 70544	FILM 120 PF ± 0.5% 100V	OF15121540
C604	CD-57	4822 126 11559	CER. 120 PF ± 0.5% 50V BLK	DD15121300
C604	CD-67/67SE	4822 121 70544	FILM 120 PF ± 0.5% 100V	OF15121540
C605	CD-67/67SE	4822 121 70437	FILM 1000 PF ± 0.5% 100V	OF15102540
C606	CD-67/67SE	4822 121 70437	FILM 1000 PF ± 0.5% 100V	OF15102540
C607	CD-57	5322 122 32265	CER. 100 PF ± 0.5% 50V BLK	DD15101300
C607	CD-67/67SE	4822 121 70543	FILM 100 PF ± 0.5%100V	OF15101540
C608	CD-57	5322 122 32265	CER. 100 PF ± 0.5% 50V BLK	DD15101300
C608	CD-67/67SE	4822 121 70543	FILM 100 PF ± 0.5%100V	OF15101540
C611				
S		4822 124 22238	ELECT. 100 µF M 25V	OA10702550
C614				
C651				
S	CD-67/67SE	4822 124 22277	ELECT. 470 µF M 16V	OA47701620
C654				
C655	CD-57	4822 124 90364	ELECT. 220 µF M 16V	OA22701620
C655	CD-67/67SE	4822 124 80123	ELECT. 220 µF M 16V ARS	OA22701640
C656	CD-57	4822 124 90364	ELECT. 220 µF M 16V	OA22701620
C656	CD-67/67SE	4822 124 80123	ELECT. 220 µF M 16V ARS	OA22701640
C657	CD-57	4822 124 90364	ELECT. 220 µF M 16V	OA22701620
C657	CD-67/67SE	4822 124 80123	ELECT. 220 µF M 16V ARS	OA22701640
C658	CD-57	4822 124 90364	ELECT. 220 µF M 16V	OA22701620
C658	CD-67/67SE	4822 124 80123	ELECT. 220 µF M 16V ARS	OA22701640
C659	CD-57	5322 122 32265	CER. 100 PF ± 0.5% 50V BLK	DD15101300
C659	CD-67/67SE	4822 126 10364	CER. 100 PF	DA16101110
C660	CD-57	5322 122 32265	CER. 100 PF ± 0.5%50V BLK	DD15101300
C660	CD-67/67SE	4822 126 10364	CER. 100 PF	DA16101110
C801	CD-57	4822 122 30103	CER. 0.022 µF +80%-20% 50V	DK18223310
C801	CD-67/67SE	4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C802	CD-57	4822 122 30103	CER. 0.022 µF +80%-20% 50V	DK18223310
C802	CD-67/67SE	4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
▲C803	CD-57	4822 124 90366	ELECT. 220 µF 50V M	OA22705020
▲C803	CD-67/67SE	4822 124 80823	ELECT. 470 µF 35V M	OA47703540
▲C804	CD-57	4822 124 90366	ELECT. 220 µF 50V M	OA22705020
▲C804	CD-67/67SE	4822 124 80823	ELECT. 470 µF 35V M	OA47703540
C805	CD-57	4822 124 90354	ELECT. 100 µF M 16V	OA10701620
C805	CD-67/67SE	4822 124 22277	ELECT. 470 µF 16V M	OA47701620
C806	CD-57	4822 124 90354	ELECT. 100 µF M 16V	OA10701620
C806	CD-67/67SE	4822 124 22277	ELECT. 470 µF 16V M	OA47701620
C811		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
C812		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
▲C813		4822 124 80582	ELECT. 4700 µF 16V M	OA47801620
C815		4822 124 80773	ELECT. 3300 µF M 6.3V	OA33800620
▲C852		4822 124 90355	ELECT. 100 µF 50V M	OA10705020
C853		4822 124 80772	ELECT. 47 µF M 35V	OA47603520
▲C854		4822 124 90355	ELECT. 100 µF 50V M	OA10705020
C871		4822 124 41539	ELECT. 47 µF M 16V	OA47601620
C901		4822 124 41534	ELECT. 10 µF M 25V	OA10602520
C902		4822 124 41534	ELECT. 10 µF M 25V	OA10602520
C903		4822 124 41535	ELECT. 100 µF M 25V	OA10702520
C904		4822 124 41535	ELECT. 100 µF M 25V	OA10702520
CD01		4822 122 32185	CER. 10 PF 50V BLK	DD11100300
CD02		4822 122 32185	CER. 10 PF 50V BLK	DD11100300
CD03		4822 122 32185	CER. 10 PF 50V BLK	DD11100300
CD04		4822 124 90363	ELECT. 220 µF M 10V	OA22701020
CD05		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
CD06		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
CD07		4822 124 90363	ELECT. 220 µF M 10V	OA22701020
CD08		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
CD12		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
CD13		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
CD15	CD-57	4822 124 90363	ELECT. 220 µF M 10V	OA22701020
CD15	CD-67/67SE	4822 124 90371	ELECT. 470 µF M 10V	OA47701020
CD16	CD-57	4822 124 90363	ELECT. 220 µF M 10V	OA22701020
CD16	CD-67/67SE	4822 124 90371	ELECT. 470 µF M 10V	OA47701020
CD21	CD-57	4822 126 11559	CER. 120 PF ± 50V BLK	DD15121300
CD21	CD-67/67SE	4822 121 70544	FILM 120 PF ± 100V	OF15121540
CD22	CD-57	4822 126 11559	CER. 120 PF ± 50V BLK	DD15121300
CD22	CD-67/67SE	4822 121 70544	FILM 120 PF ± 100V	OF15121540
CD23	CD-57	4822 126 11559	CER. 120 PF ± 50V BLK	DD15121300
CD23	CD-67/67SE	4822 121 70544	FILM 120 PF ± 100V	OF15121540
CD24	CD-57	4822 126 11559	CER. 120 PF ± 50V BLK	DD15121300
CD24	CD-67/67SE	4822 121 70544	FILM 120 PF ± 100V	OF15121540
CF01		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
CF02		4822 124 41539	ELECT. 47 µF M 16V	OA47601620
CF03		4822 124 40246	ELECT. 4.7 µF M 63V	OA47506320
CF50		4822 126 10408	CER. 220 PF	DA16221110
CF51		4822 126 11558	CER. 0.1 µF 80%-20% 50V	DA17104110
CF52		4822 124 41534	ELECT. 10 µF M 25V	OA10602520
CH01	CD-67/67SE	4822 126 11069	CER. 150 PF	DA16151110
CH02	CD-67/67SE	4822 126 11069	CER. 150 PF	DA16151110
▲CH11		4822 121 43732	FILM 0.01 µF M 250V	DF77103500
CN02		4822 124 41543	ELECT. 1 µF M 50V	OA10505020
CN03		4822 124 90357	ELECT. 2.2 µF M 50V	OA22505020
CT01			FILM 0.1 µF J 50V	DF15104310
CT02		4822 122 31125	CER. 4700 PF Z 50V	DK18472310
CT03			CER. 2200 PF K 50V	DK16222300
CT04		4822 126 11558	CER. 0.1 µF Z 50V	DA17104110
CT10	CD-67/67SE	4822 122 30103	CER. 0.022 µF Z 50V	DK18223310
			P116-CAPACITORS (COMMON)	
C***			ELECTROLYTIC CAPACITOR ONE-WAY LEAD TYPE, TOLERANCE ± 20% C108, C127, C128, C131, C151~C154, C162, CT01, CT03,	
	CD-57		C605, C606	
			P116-SEMICONDUCTORS	
D853		4822 130 33759	ZENER DIODE, 4.7V RD4.7ES 04AZ4.7, MTZJ4.7A	HD30471000
DF01				
S		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DF04				
DF51		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DF52		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DH01				
S	CD-67/67SE	4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DH10				
DN05		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DN06		4822 130 33948	ZENER DIODE, 5.6V RD5.6ES 04AZ5.6, MTZJ5.6A	HD30561000
DN07		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DN23		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DN24		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
Q102		4822 209 91174	IC CD DECORDER SAA7372GP(CD7)	HC10132490
Q106		4822 209 61073	IC TDA7073A DUAL DRIVER	HC10137490
Q107		4822 209 61073	IC TDA7073A DUAL DRIVER	HC10137490
Q108		4822 209 61073	IC TDA7073A DUAL DRIVER	HC10137490
Q605		4822 209 31153	IC DUAL LOW NOISE OP-AMP NJM2114D	HC10111090
Q606		4822 209 31153	IC DUAL LOW NOISE OP-AMP NJM2114D	HC10111090

[VERS. :VERSION, U:U.S.A, F:Japan, K:Far East, /XX:Europe]

POS. NO.	VERS. COLOR	PART NO. (For EUROPE)	DESCRIPTION	PART NO. (For U/K/F)
			PY16-FRONT CIRCUIT BOARD	
			PY16-CAPACITORS	
CY01		4822 122 40589	CER. 0.047 µF +80%-20% 50V	DA17473110
			PY16-SEMICONDUCTORS	
DY01		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DY02		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DY03		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
DY04		4822 130 32362	DIODE 1SS254 30V 0.1A	HD20022210
			PY16-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RESISTOR, ± 5% 1/6W RY01	
			PY16-MISCELLANEOUS	
SY01 ~ SY24		4822 276 20508	PUSH SWITCH	SP01011280
VY01		4822 130 91287	DISPLAY UNIT 9MT131GK FTD	HQ30914410